

# **A RETROSPECTIVE STUDY ON THE PREVALENCE AND SOCIO-DEMOGRAPHIC PROFILE OF CHILDREN WITH DEVELOPMENTAL DISABILITY**

A Dissertation

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**MASTER OF ARTS IN DEVELOPMENT STUDIES**

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## **DECLARATION**

I hereby declare that I have completed my project on **“Retrospective Study on the Prevalence and Socio-Demographic profile of children with Developmental Disability”** at National Institute of Technology, Rourkela, Odisha, in the Academic year 2015-16. Further, I declare that this research work is original one and is never submitted to any University for the award of any Diploma or Degree.

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This is to certify that the thesis entitled, “Retrospective Study on the Prevalence and Socio-Demographic profile of children with Developmental Disability” submitted by Ms. Firdaus Ambareen in partial fulfilment for the requirements for the degree of Master of Arts in Development Studies at the Department of Humanities and Social Sciences, National Institute of Technology, Rourkela, is an authentic work carried out by her under my supervision. The matter embodied in the thesis has not been submitted to any other University / Institute for the award of any Degree or Diploma.

**Dr. Ramakrishna Biswal**

**(Research Supervisor)**

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### **Abstract**

*The present study examines the prevalence and socio demographic profile of children with developmental disability from secondary data sources. The data source consists of the open data available in the government website. The prevalence of Developmental disability were calculated on the five major different categories of DD, on the basis of different castes and different religions, taking five years of statistics of Odisha and Sundargarh district. The results revealed that among the castes categories, OBC has highest prevalence rate of developmental disability across Odisha in which Cerebral Palsy has the highest prevalence among five different categories of DD, of which Puri district is highly prone to developmental disability. Sundargarh Statistics revealed that ST category is highly affected by learning disability. This data also illustrate decreasing statistics of DD from 2011-12 to 2015-16.*

**Keywords:** *Developmental Disability, Prevalence, Socio-demographic profile*

# CHAPTER- 1

## INTRODUCTION

### 1.1 Disability

Disability is the result of any challenges faced in the daily living of an individual as a result of any impairment in either physical, mental, sensory development or a combination of any or all. It restricts them in many activities as compared to normal persons, differentiating such persons from normal one.

Examples: Polio, Visual Impairment, Hearing Impairment, Accidental Handicap, etc

Developmental disability is the result of any condition that has an adverse effect on the child during the stages of pre-or post-natal periods causing significant limitations in the acquisition of various life skills, linguistic skills and social skills.

Example: Cerebral Palsy, Autism Spectrum Disorder, Intellectual Disability, Learning Disability, etc

Developmental delay refers to conditions wherein a child develops slowly compared to his/her chronologically similar counterparts taking more time to accomplish or master a skill.

Examples: Late in head holding, groveling, sitting, crawling, standing, walking, talking etc.

### 1.2 Definition

Disability is defined in various ways by number of organizations based on their orientation of the understanding of the conditions and rehabilitation methods adopted by them.

Disabilities are an umbrella term, covering impairments, activity limitations, and participation restrictions. An *impairment* is a problem in body function or structure; an *activity limitation*, is a difficulty encountered by an individual in executing a task or action; while a *participation restriction* is a problem experienced by an individual in involvement in life situations. Thus, disability is a complex phenomenon, reflecting an

interaction between features of a person's body and features of the society in which he or she lives (World Health Organization, 1980).

The World Health Organization (WHO,2001) defines disability as “Loss of function at the level of the whole person, which may include inability to communicate or to perform mobility, activities of daily living, or necessary vocational or avocational activities”.

A disability is any condition of the body or mind (impairment) that makes it more difficult for the person with the condition to do certain activities (activity limitation) and interact with the world around them (participation restrictions). (*Centre for Disease Control and Prevention,1989*)

### **1.3 Developmental Disability Defined**

Developmental disability is a diverse group of chronic conditions that are due to mental or physical impairments. Developmental disabilities cause individuals living with them many difficulties in certain areas of life, especially in "language, mobility, learning, self-help, and independent living" Developmental disabilities can be detected early on, and do persist throughout an individual's lifespan. Developmental disability that affects all areas of a child's development is sometimes referred to as global developmental delay.

“Developmental Disabilities (DD)” is a group of non-progressive conditions of a person characterised by abnormal motor control posture resulting from brain insult or injuries occurring in the pre-natal, peri-natal or infant period of development (*The Persons with Disability Act, 1995*)

Disabilities are in fact Developmental Disabilities caused due to insult to the brain and damage to the central nervous system. This could be due to several environmental factors which deprive the brain of oxygen before, during or after birth. These disabilities are Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities. These are neither disease nor contagious nor progressive. They cannot be cured by drugs or surgery. But early detection

and training improves outcome. This is done using the services of Physio-Occupational and Speech Therapist, Community Based Rehabilitation Workers and Special Educators. (*National Trust Act, 1999*)

#### **1.4 Difference between Disability and Developmental Disability**

Disability can be physical, it can occur due to trauma, due to accident at any age of a person, it cannot be treated. For example if a person is having polio he can't be treated for it to become polio free. Disability is the result of any challenges that causes due to any impairment in any physical deformity or cognitive defect or combination of both. It restricts them in many activities as compared to normal person. Thus differentiate such person from normal one.

Developmental disabilities are totally related to nervous system. It occurs due some defect in neuron during perinatal prenatal and post-natal stage and development stage of a child. It can be treated with support in many cases to make child normal. Delevopmental delay is also one of the form of developmental disability which delays the growth duration of any child.

#### **1.5 Categories/Types of Developmental Disability**

##### **i) Autism Spectrum Disorder (ASD)**

The term 'autism' was first used about fifty years ago by a psychiatrist named Dr. Leo Kenner at John Hopkins University. He applied term 'autism' to a group of children who had several social, behavioral and communication problems. Autism spectrum disorder (ASD) is the name for a group of developmental disorders. ASD includes a wide range, "a spectrum," of symptoms, skills, and levels of disability. Such children have problem communicating and interacting with others Autism affect 1 in 150 children and 1in 94 boys Autism does not discriminate by geography, class, or ethnicity. Its symptoms get recognized in the first two years of life of a child. In the first few years of life, some autistic toddlers reach

developmental milestones, such as talking, crawling, and walking, much earlier than the average child; whereas others are considerably delayed.

ASD children suffered two main types of behaviors:

**Restrictive / repetitive behaviors include:-**

- Repeating certain behaviors or having unusual behaviors as well as limited interest or activities
- Having overly focused interests, such as with moving objects or parts of objects
- Having a lasting, intense interest in certain topics, such as numbers, details, or facts.

**Social communication / interaction behaviors include:-**

- Become sad even when there is bit change in routine and also when shifted or visited to new places.
- Rarely make eye contact and hardly listen to other
- Having complication in communication
- Repeating words or phrases that they hear, this behavior is called echolalia.
- Their facial expression, movements and gesture do not match to what they speak.
- Strange tone of voice that may sound sing-song or flat and robot-like
- They have trouble in understanding other's point of view or action.
- Hand biting, head banging as well as hyper/hypo kind of activity they do

**ii) Cerebral Palsy (CP)**

Cerebral palsy refers to a group of neurological disorders that appear in infancy or early childhood and permanently affect body movement and muscle coordination. Cerebral palsy (CP) is caused by damage to or abnormalities inside the developing brain that disrupt the brain's ability to control movement and maintain posture and balance. The term *cerebral* refers to the brain; *palsy* refers to the loss or impairment of motor function.

## **Types of Cerebral Palsy:-**

Doctors classify CP according to the main type of movement disorder involved. Depending on which areas of the brain are affected, one or more of the following movement disorders can occur:

### **a) Spastic Cerebral Palsy (Stiff muscles)**

Children with spastic CP have increased muscle tone, due to which their get and thus they have movement problem Spastic CP is further classified into following types:-

- Spastic diplegia/diparesis— Spastic diplegia/dparesis mainly affect legs of the child, mainly leg muscles gets stiffed in this category. Children who were affected by this type of CP have difficulty in walking due to stiffed muscles which cause their legs to pull together, turn inward and cross at the knees. This movement defect is also known as scissoring.
- Spastic hemiplegia/hemiparesis—In this type of CP mainly children's arms is affected and in few cases even legs also get affected.
- Spastic quadriplegia/quadruparesis—It is the most severe form of spastic CP. It affects all four limbs, the trunk, and the face. Children affected with this type of CP generally not able to walk and they were also affected by some other developmental disabilities such as intellectual disability; seizures; or problems with vision, hearing, or speech.

### **b) Dyskinetic Cerebral Palsy (also includes athetoid, choreoathetoid, and dystonic cerebral palsies)**

Children with dyskinetic CP have issue in movement of their hands, arms, feet and legs, they don't have control over these body parts movement which make it difficult for them to sit and walk properly, their movement will be slow show jerk sign. In some of the cases child's face and tongue are also get affected and thus they have problem in sucking, swallowing, and talking. Children with dyskinetic CP have characteristic in which muscle

tone can change (varying from too tight to too loose) not only from day to day, but even during a single day. It does not remain uniform.

c) Ataxic Cerebral Palsy

Children who are affected by ataxic CP have problems with their balance and coordination. They might be unstable when they walk. They might have a difficulty in quick movements or movements they have difficulty in writing in speed. They don't have control over their hands and arms while they catch something.

d) Mixed Cerebral Palsy

Children who show more than one type of symptoms of CP are called affected by mixed CP. In mixed CP one common type is spastic-dyskinetic.

**iii) Learning Disability (LD)**

As per the Individuals with Disabilities Education Act (IDEA) definition Learning disability is "a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia."

However, learning disabilities do not include, "learning problems that are primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage."

**iv) Intellectual Disability (ID)/Mental Retardation (MR)**

Intellectual disability was also known as mental retardation. When any person's ability is below normal man's ability which restricts them from many activities then such person are termed as intellectually disabled. Intellectual disability varies greatly from children to children. Some may have slight problem while other may be severely affected. Children

affected with ID have difficulty in taking care of themselves and they were also emotionally reserved or touched. ID children consume more time to learn, understand, walk, and eat by self as compared to normal child. All these issues trouble such children in school life also.

#### **v) Multiple Disabilities (MD)**

Multiple Disabilities are those disabilities in which any child is affected by more than one types of developmental disabilities. They have co-occurring disabilities. They may be affected by CP along with intellectual disability or CP with learning disability, ASD with vision impairment or hearing impairment which may include deafness, speech problem, emotional disability and many other such combinations.

### **1.6 Causes of Different Types of Developmental Disability**

#### **i) Autism Spectrum Disorder (ASD)**

There is no specific known cause of autism, but there is growing evidence that autism can be caused by a variety of problems. There is some indication of a genetic influence in autism. Currently, a great deal of research has focused on locating the ‘autism gene;’ however, many researchers speculate that three to five genes will likely be associated with autism. There is also evidence that the genetic link to autism may be a weakened or compromised immune system. Other research has shown that depression and/or dyslexia are quite common in one or both sides of the family when autism is present. There is also evidence that a virus can cause autism. There is an increased risk in having an autistic child after exposure to rubella during the first trimester of the pregnancy. Cytomegalo virus has also been associated with autism. Additionally, there is also a growing concern that viruses associated with vaccinations, such as the measles component of the MMR vaccine and the pertussis Component of the DPT shot, may cause autism. There is growing concern that toxins and pollution in the environment can also lead to autism.



*Physical abnormalities-* Researchers have located several brain abnormalities in individuals with autism; however, the reasons for these abnormalities are not known nor are the influence they have on behavior. These abnormalities can be classified into two types-dysfunctions in the neural structure of the brain and abnormal biochemistry of the brain. A dysfunctional immune system has also been associated with autism. It is thought that a viral infection or an environmental toxin may be responsible for damaging the immune system. As mentioned above, there is also evidence of a genetic association to a compromised immune system. There is growing evidence that the gut or intestinal tract of autistic children is impaired.

## **ii) Cerebral Palsy (CP)**

Cerebral palsy (CP) is caused by abnormal development of the brain or damage to the developing brain that affects a child's ability to control his or her muscles. There are several possible causes of the abnormal development or damage. People used to think that CP was mainly caused by lack of oxygen during the birth process. Now, scientists think that this causes only a small number of CP cases.

The brain damage that leads to CP can occur during peri-natal, pre-natal and post-natal period. The risk is also high during the first years of a child's life, as till that time brain is in process of development. The majority of children have congenital cerebral palsy CP (that is, they were born with it), although it may not be detected until months or years later. A small number of children have acquired cerebral palsy, which means the disorder begins after birth.

Some causes of acquired CP are:

- Infection—Infections of the brain, for example, meningitis or encephalitis during infancy.
- Injury—Injuries to the brain, for example, head injuries caused by motor vehicle crashes or child abuse.

- Problem with blood flow to the brain—Cerebro vascular accidents, for example, stroke or bleeding in the brain associated with a blood clotting problem, blood vessels that didn't form properly, a heart defect that was present at birth, or sickle cell disease.
- In majority of cases the cause of cerebral palsy is not known it may cause due to genetic abnormalities, congenital brain malformations, maternal infections or fevers, or fetal injury.

### iii) Learning Disability (LD)

Facts about causes of learning disability is still not known But researchers gave assumption that it is related to differences in brain structure. These differences are present from birth and often are inherited. Scientists have found that learning disabilities are related to areas of the brain that deal with language<sup>1</sup> and have used imaging studies to show that the brain of a dyslexic person develops and functions differently from a typical brain.

Sometimes, factors that affect a developing fetus, such as alcohol or drug use, can lead to a learning disability. Other factors in an infant's environment may play a role as well. These can include poor nutrition and exposure to toxins such as lead in water or paint. In addition, children who do not receive the support necessary to promote their intellectual development early on may show signs of learning disabilities once they start school.

Sometimes a person may develop a learning disability later in life. Possible causes in such a case include dementia or a traumatic brain injury (TBI)

### iv) Intellectual Disability (ID)

- **Genetic conditions.** These include things like Down syndrome and fragile X syndrome.
- **Problems during pregnancy.** Things that can interfere with fetal brain development include alcohol or drug use, malnutrition, certain infections, or preeclampsia.

- **Problems during childbirth.** Intellectual disability may result if a baby is deprived of oxygen during childbirth or born extremely premature.
- **Illness or injury.** Infections like meningitis, whooping cough, or the measles can lead to intellectual disability. Severe head injury, near-drowning, extreme malnutrition, exposure to toxic substances such as lead, and severe neglect or abuse can also cause it.
- **None of the above.** In two-thirds of all children who have intellectual disability, the cause is unknown.

#### **v) Multiple Disabilities (MD)**

Studies say that approximately three quarters of all children who have severe intellectual impairment; there is a biological cause which is typically a prenatal bio-medical factor. In other cases, there are specific genetic factors that cause particular types of impairments because of gene or chromosome abnormalities.

### **1.7 Treatments/Rehabilitation**

#### **i) Autism Spectrum Disorder (ASD)**

There are no medications that can cure ASD or treat the core symptoms. However, there are medications that can help some people with ASD function better. For example, medication might help manage high energy levels, inability to focus, depression, or seizures. There are many different types of treatments available. For example, auditory training, discrete trial training, vitamin therapy, anti-yeast therapy, facilitated communication, music therapy, occupational therapy, physical therapy, and sensory integration.

#### **ii) Cerebral Palsy (CP)**

There is no cure for CP, but treatment can improve the lives of those who have the condition. Common treatments include medicines; surgery; braces; and physical, occupational, and speech therapy. No single treatment is the best one for all children with CP.

There is no standard therapy that works for every individual with cerebral palsy. Once the diagnosis is made, and the type of CP is determined, a team of health care professionals will work with a child and his or her parents to identify specific impairments and needs, and then develop an appropriate plan to tackle the core disabilities that affect the child's quality of life.

### **iii) Learning Disability (LD)**

The most common treatment for learning disabilities is special education. Specially trained educators may perform a diagnostic educational evaluation assessing the child's academic and intellectual potential and level of academic performance. Once the evaluation is complete, the basic approach is to teach learning skills by building on the child's abilities and strengths while correcting and compensating for disabilities and weaknesses. Other professionals such as speech and language therapists also may be involved. Some medications may be effective in helping the child learn by enhancing attention and concentration. Psychological therapies may also be used

### **iv) Intellectual Disability**

Special education and training may begin as early as infancy. This includes social skills to help the person function as normally as possible. It is important for a specialist to evaluate the person for other physical and mental health problems. Persons with intellectual disability are often helped with behavioural counselling.

## **CHAPTER 2**

### **REVIEW, RATIONALE AND OBJECTIVES**

#### **2.1 Review of literature**

This chapter highlights the work done in the area of DD especially on the prevalence, causal factors, comorbidity, treatment, birth weight, OFC measurements and birth asphyxia. Specific studies from around the world have been reported here.

##### **2.1.1. Prevalence of Developmental Disability**

There is an increment of developmental disability irrespective of gender, caste and religion with an average of 9% increment post 2015. There is sharp rise in Autism Spectrum Disorder after 1995 (Van Narden Braun K et al., 2005). They have observed and analysed the disabilities data collected from 8 years old children in Metropolitan Atlanta from 1991-2010 (Metropolitan Atlanta Surveillance Program, 1991-2010).

Another study on five country of Metropolitan Atlanta area namely Cyton, Cobb, Dekalb, Fulton and Gwinnett shows a sharp decrease in Mental Retardation and Cerebral Palsy post 1996 (Bhasin et al, 2006). They have observed and analysed the disability data from 8 year in five country of Metropolitan Atlanta from 1996-2000 (Metropolitan Atlanta Development Disabilities Surveillance Program, MADDSP)

Autism and Developmental Disabilities Monitoring (ADDM, 2012) shows that about 1 in 68 or 1.5% of US children were identified with ASD. There is an increase in prevalence rate from 2002-2010.

A study on prevalence of Cerebral palsy among three areas of the US namely Alabama, Metropolitan Atlanta and South eastern Wisconsin in 2002 gave evidence that prevalence of Cerebral Palsy is higher in boys than girls (Yeargin-Allsopp M, et al, 2008) They observed

and analyzed that overall boys/girls ratio of cerebral palsy is 1.4:1 The data were collected from US population in 2002 (US population based Surveillance System, 2002).

From 2000 to 2004, change in Autism Spectrum Disorder prevalence in four areas of the US namely Georgia, Maryland, Arizona and Carolina showed 3times increment in the prevalence of ASD (Catherine et al, 2010). They have observed and analyzed 8year old children data at multiple source with review based on Diagnostic and Statistical manual(DSM IV).

A study conducted on children of multi resident namely Alabama, Missouri, Georgia, and Wisconsin, illustrate that Cerebral Palsy remained higher in Black children as compared to white children, about 10% more black children were affected by CP as compared to white children (Durkin MS, et.al, 2015). Thy observed and analyzed data collected from 8year old children in US from 2002-2008(Autism and Disabilities Monitoring Network Surveillance, 2010)

### **2.1.2. Causal Factors**

Effect of lifestyle of pregnant mothers, such as smoking and drinking alcohol increases the risk up to 50% of developmental disability in the children (Kesmodel US, et.al, 2010).They have observed and analyzed data collected from 1750 pregnant mother in Danish 1997-2007 (The Danish Nation Birth Cohort, 1997-2003)

Relation between maternal pregnancy, body mass index and child psychological development illustrate that obese mothers during pregnancy have lower psychological development in their children. Such women have 5 times higher risk of producing ADHD children, while there is also 3 times higher chances of giving birth to Autism affected children, and about 2 times more chances to have emotional defect, peer problem, speech problem (Jo et.al, 2015).The data is observed and analyzed on 6year old children of US (Infant Feeding Practice Study, 2009)

Parental age was found to be one of the major factors of developmental disability. It is found that mother's age below 35 years with increased father's age have about 21% higher risk of giving birth to developmental disabled children (Parner ET, et.al, 2012). They observed and analyzed data collected from 9556 mother out of 1311736 mothers from Denmark during 1980-2003.

### **2.1.3. Comorbidity**

A study on prevalence of Cerebral Palsy, co-occurring Autism Spectrum Disorder and Motor Functioning revealed that about 1 in every 323 children were affected with CP and about 7% of it have co-occurring Autism Spectrum Disorder (Christensen, et.al, 2013) Researcher had collected and analyzed the data from 8 year old children residing in USA in 2006 (Autism& Developmental Monitoring Network Surveillance, 2006)

In a comparative study between ASD co-occurring Intellectual disability revealed prenatal children with only Intellectual disability is higher than with children with both Autism Spectrum Disorder and Intellectual disability or ASD only (Schieve et.al, 2012).The data were collected and analyzed from US among 7547 children with prenatal risk factor during 2006-2010.

In a study on Autism Spectrum Disorder and co-occurring developmental and psychiatric condition among 8 year old US children, it was found that there is 81% male children with co-occurring developmental and psychiatric condition (Levy, et al, 2010).They observed and analyzed data collected from 8year old children with ASD and Co-occurring developmental and psychiatric condition (Multi Site Surveillance Program, 2008).

In a study, there is evidence of Autism Spectrum Disorder Co-occurring with vision impairment and hearing loss. It is found that 7% of children with ASD have co-occurring vision impairment and hearing loss (Kanehrela, et al, 2013). The data were observed and

analyzed from 8year old children from Metropolitan Atlanta Development Surveillance Program (MADDSP, 2010)

#### **2.1.4. Treatment**

An evidence found that treatment of children with Attention Deficit Disorder illustrate that 74% of children received medication treatment while 44% received behavioural therapy(Visser et al, 2015). They observed and analysed data collected from 4-17 year old children in America from 2009-2010 (National Survey of Children with Special Health care Need, 2011)

Effects of early intervention are effective in promoting developmental progress in infants and toddlers with biologically based disabilities (Jack et al, 1987). They analysed and observed data collected from children below 3 years of age.

#### **2.1.5. Low Birth Weight**

Extreme low birth weight of children causes neurologic abnormalities, developmental delay and functional delay (Betty et.al, 2000). They observed and analysed data collected from 18-22 months children with extreme low birth weight between 500gram -1500gram from 1993 and 1994 (National Institute of Child Health and Human Development Neonatal Research Network, 1993–1994).

Increased survival for extremely low birth weight neonates will not increase the risk of developmental delay till one year (T. Michael O'Shea, et al, 1997). They observed and analysed data collected from 513 children weighing between 800grams -1800 grams in North Carolina from 1979-1994.

#### **2.1.6. Birth Type**

In preterm children, neurological and developmental problem is common with 21% more possibility of risk (Marlow et.al, 2005). They observed and analysed data collected from United Kingdom and Ireland in 1995 from children born after 25weeks of gestation.



There is evidence that extreme preterm children have 40% more risk of developmental disability and they face major problem among group of children (Nicholus et.al, 2000). They observed and analyzed data collected from 30 months children of United Kingdom and Ireland in 1995.

#### **2.1.7. Size of Orbito-Frontal Cortex (OFC)**

Researcher suggested that orbitofrontal cortex involves in modulation of antisocial behaviour, it may increase or decrease reactive aggression (Blair et al, 2004).The data were collected from US in 1999 and observed and analysed on Instrumental aggression basis which is related to fundamental failure in social behaviour.

#### **2.1.8. Birth Asphyxia**

Children with neonatal encephalopathy has birth asphyxia (Karin et al, 1991). Some evidences also indicate that neurological signs are not strongly related to obstetric complications or fetal distress.

### **2.2. Rationale of the Study**

The prevalence of developmental disability is rising around the globe with no known specific cause. Such a situation would put a burden on the country's economy as managing, rehabilitating and training an increased number of people with disability poses serious challenge because of lack of trained professionals and institutions. However, if identified early, the process of rehabilitation and training would be smoother to integrate them in the mainstream. In this regard, it is important to know the prevalence of developmentally disabled population. Recently, we have started documenting the data on disability and it is made available to public through World Wide Web. However, the expertise of the enumerator and the data entered through these processes is often critically looked by professionals. Literature on developmental disability have scantily addressed the socio-

demographic profile of the people, that may be beneficial for developing inclusion plans for them at the family and community levels.

Sundargarh district of Odisha is a tribal dominated district where the level of education and health facilities are falling below the state average. Early diagnosis and early intervention of DD children would help them lead a functionally meaningful life. However, in the absence of adequate education and health facilities, many such cases remain undiagnosed and untreated for long, just to return after some years with serious functional challenges to their lives. As a result, the effectiveness of therapeutic intervention hardly have any long term impact. This necessitates the researcher to focus on Sundargarh district data that may be utilized by policy makers to make effective remedial plans for the DD children of the district.

Based on the review of literature and rationale of the current study following objectives have been formulated.

### **2.3. Objectives of the Study**

- To measure the prevalence of various categories of developmental disability in Odisha vis-a-vis Sundargarh district of Odisha
- To investigate the prevalence of Cerebral Palsy, Autism Spectrum Disorder, Learning Disability, Intellectual Disability/Mental Retardation and Multiple Disability from secondary data.
- To analyse socio demographic profile of children having different forms of developmental disabilities like Cerebral Palsy, Autism Spectrum Disorder, Learning Disability, Intellectual Disability/Mental Retardation and Multiple Disability

## **CHAPTER-3**

### **METHODOLOGY**

#### **3.1 The Sample**

The data on disability were collected from the census level data of children having various forms of disability retrieved from the Children with Special Needs (CWSN) reports of the Odisha Primary Education Program Authority (OPEPA). The data on Cerebral Palsy, Autism Spectrum Disorder, Learning Disability, Intellectual Disability/Mental Retardation and Multiple Disability were analysed in the present study. All children falling under any of these categories during the periods of 2011-12 to 2015-16 were included for analysis.

#### **3.2 The Techniques of Data Collection**

The data were retrieved from OPEPA website and entered in the excel sheet for further analysis. Data were available from 2011-12 to 2015-16 with District, Block/ULB, Village, School Type and Category wise information. There were data for all 30 districts for children who were in school and out of school along with the information on caste and religion. The CWSN consists of Blindness, Low Vision, Hearing Impaired, Speech Impaired, Locomotor, Orthopaedic, Mental Retardation, Mental Illness, Learning Disability, Cerebral Palsy, Autism, Multiple Disability, Leprosy, Deaf Blind categories of disability. However, for the present study the categories of Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral Palsy (CP), Autism Spectrum Disorder (ASD), and Multiple Disability (MD) were considered based on the review of literature on developmental disability. The socio-demographic information of these data sets utilized the caste and religion based analysis as no other information was available.

### **3.3 Procedure**

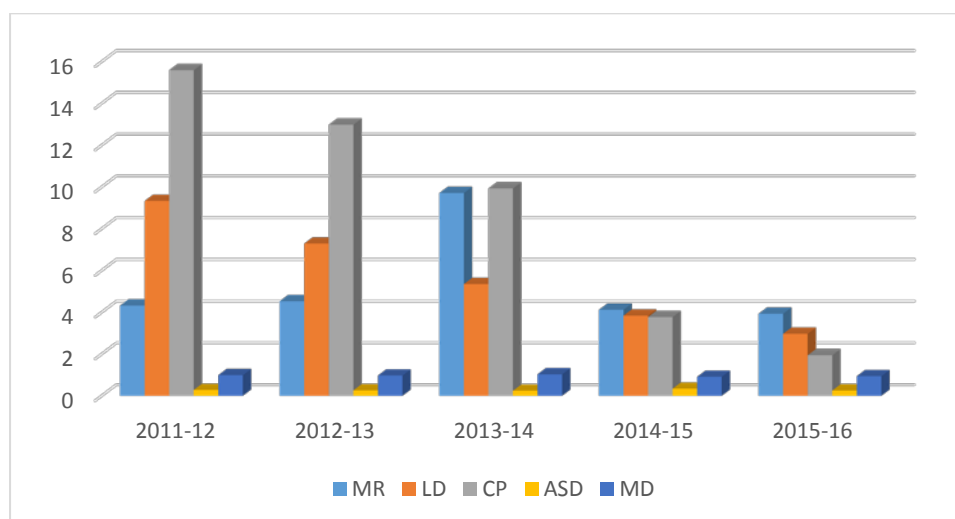
Data were collected from CWSN reports of OPEPA for the first set. It is an open access source. Five different categories of disability data were entered and analysed. Second set of data were collected from the past records of children visiting High Risk Baby Clinic, ISPAT General Hospital, Rourkela after obtaining due permission from the Head of the Clinic. Five years of OPEPA data were analysed on caste and religion basis.

## CHAPTER 4

### ANALYSIS OF RESULTS AND FINDINGS

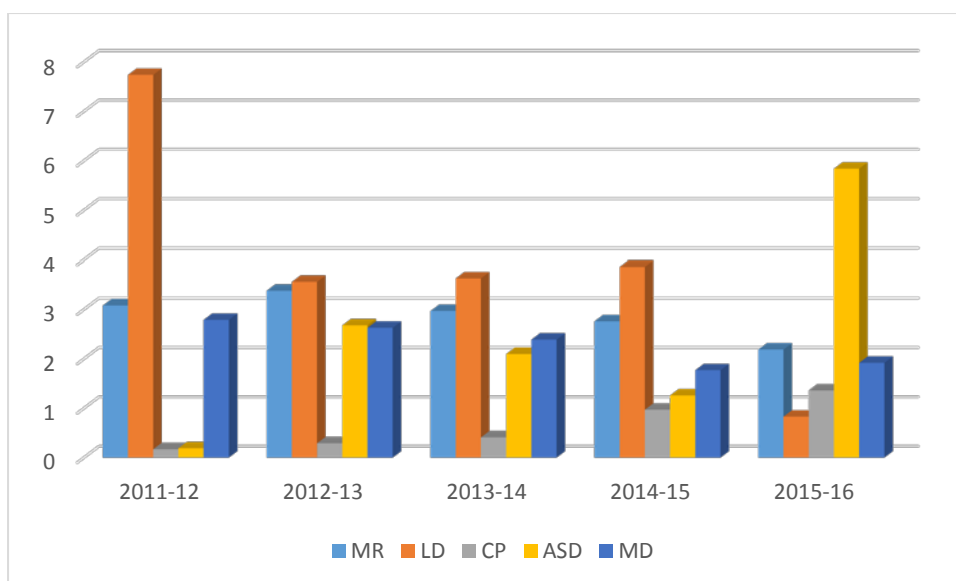
#### 4.1 Prevalence of State and District Based Data

The present study is primarily a prevalence study that took into account the available data on DD in Odisha and Sundargarh District. There are five sections in the result and discussion chapter. The first section describes the prevalence data of five years for each category of disability separately for the state and the district.



**Fig 4.1.1 Prevalence of DD in Odisha (Source: OPEPA)**

Figure 4.1.1 illustrate that Cerebral Palsy is the highest during 2011-12, 2012-13 and 2013-14 in Odisha with 15.59% of prevalence during 2011-12. Autism Spectrum Disorder is the lowest during the period starting from 2011 to 2015 and the lowest during 2013-14 with 0.24% of prevalence. This figure also showed a continuous decrease in developmental disability from 2011-12 to 2015-16 across Odisha.



**Fig 4.1.2 Prevalence of DD in Sundargarh (Source:OPEPA)**

Figure 4.1.2 illustrate that prevalence of learning disability is the highest with 7.74% during 2011-12 while showing minor difference in learning disability during 2012-2014. Whereas Cerebral Palsy is the lowest with 0.17% of prevalence during 2011-12 in Sundargarh district of Odisha. The prevalence of ASD showed an irregular trend from 2011-12 to 2015-16 with having the highest during 2015-16.

## 4.2 Socio-Demographic Profile Analysis

**Table 4.2.1. Prevalence of DD on Caste Basis across Odisha and Sundargarh District (Source: OPEPA)**

Odisha/Sundargarh	General	SC	ST	OBC	Other
Odisha(2011-12)	80.73% (CP)	57.44% (CP)	72.56% (LD)	61.28% (CP)	33.90% (CP)
Sundargarh	48% (LD)	68.11% (LD)	84.15% (LD)	45.88% (LD)	92.30% (LD)
Odisha (2012-13)	62.92% (CP)	58.20% (CP)	66.06% (LD)	61.23% (CP)	37.86% (CP)
Sundargarh	50% (LD)	61.53% (ID)	60% (LD)	31.25% (LD)	66.66% (LD)
Odisha (2013-14)	59% (CP)	55.33% (CP)	57.89% (LD)	47.29% (CP)	23.17% (CP)
Sundargarh	43.75% (LD)	48.27% (ID)	54.37% (LD)	52.45% (ID)	55.55% (LD)
Odisha (2014-15)	34.33% (CP)	35.48% (CP)	32.94% (LD)	39.31% (ID)	42% (ID)
Sundargarh	2.42% (LD)	43.75% (ID)	56.28% (LD)	57.69% (ID)	66.66% (CP)
Odisha (2015-16)	48.86% (ID)	38.25% (ID)	48.11% (LD)	46.49% (ID)	42% (MR)
Sundargarh	57.14% (ID)	42.85% (ID)	44.26% (LD)	57.69% (ID)	66.66% (CP)

From the above data, with respect to caste, it was found that prevalence of Cerebral Palsy is the highest among all the five categories of developmental disability across Odisha, while

Sundargarh district show increasing figures in Learning Disability during 2011-12. It also explains that prevalence of Cerebral Palsy is highest among OBC community with 61.28% across Odisha while Learning disability shows prevalence of 72.56% in Sundargarh district.

**Table 4.2.2. Prevalence of DD on Religion Basis across Odisha and Sundargarh District (Source: OPEPA)**

State/ District	Muslim	Christian	Sikh	Jain	Budhist	None
2011-2	85.45% (CP)	71.42% (CP)	60% (LD)	66.66% (LD)	71.31% (CP)	48.47% (CP)
	76.66% (LD)	91.68% (LD)	No DD	No DD	No DD	69.23% (LD)
2012-13	83.22% (CP)	49.74% (LD)	75% (LD)	66.66% (LD)	72.82% (CP)	46.77% (CP)
	76.83% (LD)	75.39% (LD)	No DD	No DD	No DD	42.49% (LD)
2013-14	83.58% (CP)	42.08% (LD)	100% (ID)	80% (LD)	66.66% (CP)	43.69% (CP)
	60.86% (LD)	76.92% (LD)	No DD	No DD	No DD	44.15% (ID)
2014-15	52.86% (CP)	42.08% (LD)	No DD	75% (LD)	66.66% (CP)	82.84% (ID)
	61.53% (LD)	76.92% (LD)	No DD	No DD	No DD	46.30% (ID)
2015-16	38.77% (CP)	39.65% (ID)	No DD	100% (ID)	71.42% (CP)	39.10% (ID)
	40% (ASD)	37.71% (LD)	No DD	No DD	No DD	60.25% (ID)

Above given data collected from OPEPA from 2011-12 to 2015-16, illustrate the prevalence of developmental disability among different religion. These data accounted for the prevalence among five developmental disabilities and the highest prevalence across Odisha and Sundargarh district. This table show highest prevalence of Cerebral Palsy with among Muslim community during 2011-12 across Odisha while it show highest prevalence of Learning disability among Christian community with 91.68% during 2011-12.

#### **4.2.1. Prevalence and Categories of DD with respect to Caste during 2011-12**

**General Category-** During 2011-12, among all the 30 districts of Odisha, in general category, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral Palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 3,945 reported cases of above given DD among all districts of Odisha in general category, there were 3185 reported CP, which is about 80.73%. In which 3044 cases of CP were found out of 3185 cases of CP in Puri district of Odisha, which is about 95.57% , It shows that CP was highest among all the five categories of DD in general category.

During 2011-12 out of 25 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 12 cases of LD followed by Mental Retardation/Intellectual Disability which reported 11 cases. It shows that in

Sundargarh district among general category, there were about 48% of LD and 44% of MR were reported respectively. While there were no cases of Autism and Multiple Disabilities were reported during 2011-12 in Sundargarh district of Odisha.

**Schedule Caste (SC)-** During 2011-12, among all the 30 districts of Odisha, in Schedule Caste (SC), out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral Palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 8,726 reported cases of above given DD among all districts of Odisha in SC category, there were 5013 cases were reported cases of CP, which is about 57.44%. In which 4755 cases were found out of 5013 cases of CP in Puri district of Odisha, which is about 94.85%, which shows that CP was highest among all the five categories of DD in SC category.

In 2011-12, out of 69 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 47 cases of LD followed by Mental Retardation (MR)/Intellectual Disability (ID) which reported 13 cases. It shows that in Sundargarh district among SC category there were about 68.11% of LD and 18.84% of MR were reported respectively. While there zero cases of Autism were reported during 2011-12 in Sundargarh district of Odisha.

**Schedule Tribe (ST)-** During 2011-12, among all the 30 districts of Odisha, in Schedule Tribe(ST), out of five major categories of Developmental Disabilities(DD) namely Mental Retardation(MR)/Intellectual Disability(ID), Learning Disability(LD), Cerebral palsy(CP), Autism and Multiple Disabilities, the prevalence of CP was highest .Out of total 6,059 reported cases of above given DD among all districts of Odisha in ST category, there were 4397 LD cases were reported, which is about 72.56%. In which 1276 cases were reported out of 4379 cases of LD in Kandhamal district of Odisha, which is about 29.01%. It shows that Learning Disability was highest among all the five categories of DD in ST category.

In 2011-12, out of 808 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 680 cases of LD followed by Mental Retardation (MR)/Intellectual Disability (ID) which reported 86 cases. It shows that in Sundargarh district among ST category there were about 84.15% of LD and 10.64% of MR were reported respectively.



**Other Backward Caste (OBC)** - In the year 2011-12, among all the 30 districts of Odisha, in general category, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral Palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 13,890 reported cases of above given DD among all districts of Odisha in OBC, there were 8513 reported cases of CP found in OBC category, which is about 61.28%. In which about 8060 cases were reported out of 8513 cases of CP in Puri district of Odisha, which is about 94.67%. It shows that CP is highest among all the five categories of DD in OBC category.

In the year 2011-12 out of 85 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 39 cases of LD followed by Mental Retardation which reported 37 cases. It shows that in Sundargarh district among OBC category there were about 45.88% of LD and 43.52% of MR were reported respectively. While there were no or zero cases of Multiple Disabilities were reported during 2011-12 in Sundargarh district of Odisha.

**Other-** In the year 2011-12, among all the 30 districts of Odisha, in general category, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral Palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 292 reported cases of above given DD among all districts of Odisha in Other category, there were 99 reported cases of CP in other category , which is about 33.90%. In which about 86 reported cases were found in Puri district of Odisha, which is about 86.86% It shows that CP is highest among all the five categories of DD in Other category.

In the year 2011-12 out of 13 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 12 cases of LD followed by Mental Retardation which reported 1 case. It shows that in Sundargarh district among general category there were about 92.30% of LD and 7.69% of MR were reported respectively. While there were no or zero cases of Cerebral palsy, Autism and Multiple Disabilities were reported during 2011-12 in Sundargarh district of Odisha.

#### **4.2.2 Prevalence and Categories of DD with respect to Caste during 2012-13**

**General Category-** During 2012-13, among all the 30 districts of Odisha, in general category, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral Palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 3633 reported cases of above given DD among all districts of Odisha in general category, there were 2286 reported cases of CP, which is about 62.92%. In which 2149 cases of CP were found out of 2286 cases of CP in Puri district of Odisha, which is about 94.00% , It shows that CP is highest among all the five categories of DD in general category.

In 2012-13, out of 34 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 17 cases of LD followed by 11cases of Intellectual Disability/Mental Retardation... It shows that in Sundargarh district among general category there were about 50% of LD and 32.35% of MR were reported respectively. While there were no or zero cases of Autism and Multiple Disabilities were reported during 2012-13 in Sundargarh district of Odisha.

**Schedule Caste (SC)-** During 2012-13, among all the 30 districts of Odisha, in Schedule Caste (SC), out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 6602 reported cases of above given DD among all districts of Odisha in SC category, there were 3843 cases were reported cases of CP, which is about 58.20%. In which 3573 cases were found out of 3843 cases of CP in Puri district of Odisha, which is about 92.97%, which shows that CP highest among all the five categories of DD in SC category.

In 2012-13, out of 69 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 26 cases of MR followed by LD which reported 16 cases. It shows that in Sundargarh district among SC category there were about 61.53 % of ID and 42.30% of MR were reported respectively. While there were only 1 reported cases of Autism during 2011-12 in Sundargarh district of Odisha.

**Schedule Tribe (ST)-**During 2012-13, among all the 30 districts of Odisha, in Schedule Tribe(ST), out of five major categories of Developmental Disabilities(DD) namely Mental Retardation(MR)/Intellectual Disability(ID), Learning Disability(LD), Cerebral palsy(CP), Autism and Multiple Disabilities, the prevalence of CP was highest .Out of total 4453

reported cases of above given DD among all districts of Odisha in ST category, there were 2942 LD cases were reported, which is about 66.06%. In which 843 cases were reported out of 2942 cases of LD in Kandhamal district of Odisha, which is about 28.65%. It shows that Learning Disability was highest among all the five categories of DD in ST category.

In 2012-13, out of 315 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 189 cases of LD followed by Mental Retardation (MR)/Intellectual Disability (ID) which reported 88 cases. It shows that in Sundargarh district among ST category there were about 60% of LD and 27.93% of MR were reported respectively.

**Other Backward Caste (OBC)-** During 2012-13, among all the 30 districts of Odisha, in general category, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 9813 reported cases of above given DD among all districts of Odisha in OBC, there were 6009 reported cases of CP found in OBC category, which is about 61.23%. In which about 5586 cases were reported out of 6009 cases of CP in Puri district of Odisha, which is about 92.96%. It shows that CP was highest among all the five categories of DD in OBC category.

In 2012-13 out of 64 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 20 cases of LD followed by 34 cases of Mental Retardation It shows that in Sundargarh district among OBC category there were about 31.25% of LD and 53.12% of MR were reported respectively. While there were no or zero cases of autism found in Sundargarh district of Odisha during 2012-13.

**Other-** During 2012-13, among all the 30 districts of Odisha, in general category, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 206 reported cases of above given DD among all districts of Odisha in Other category, there were 78 reported cases of CP in other category , which is about 37.86%. In which about 63 reported cases were found out of total 78 cases of CP in Puri district of Odisha, which is about 80.76% It shows that CP was highest among all the five categories of DD in Other category.

In 2012-13 out of 12 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 8 cases of LD followed by 2 cases of CP. It shows that in Sundargarh district among other category there were about 66.66% of LD and 16.66% of CP were reported respectively. While there were zero cases of Multiple Disabilities were reported during 2012-13 in Sundargarh district of Odisha.

#### **4.2.3. Prevalence and Categories of DD with respect to Caste during 2013-14**

**General Category-** During 2013-14, among all the 30 districts of Odisha, in general category, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 2908 reported cases of above given DD among all districts of Odisha in general category, there were 1716 reported cases of CP, which is about 59.00%. In which 1551 cases of CP were found out of 1716 cases of CP in Puri district of Odisha, which is about 90.38% , It shows that CP was highest among all the five categories of DD in general category.

In 2013-14 out of 32 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 14 cases of LD followed by 12 cases of Mental Retardation/Intellectual Disability which reported 12 cases. It shows that in Sundargarh district among general category there were about 43.75% of LD and 37.5% of MR/ID were reported respectively. While Autism and Multiple Disabilities reported 1 cases each during 2013-14 in Sundargarh district of Odisha.

**Schedule Caste (SC)-** During 2013-14, among all the 30 districts of Odisha, in Schedule Caste (SC), out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 5197 reported cases of above given DD among all districts of Odisha in SC category, there were 2876 reported cases of CP, which is about 55.33%. In which 2591 cases of CP were found out of total 2876 cases of CP in Puri district of Odisha, which is about 90.09%, which shows that CP highest among all the five categories of DD in SC category.

In 2013-14, out of 29 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 14 cases of MR followed by 10 cases of LD. It shows that in Sundargarh district among SC category there was about 48.27 %

of ID and 34.48% of MR were reported respectively. While there were no cases of autism was found during 2013-14 in Sundargarh district of Odisha.

**Schedule Tribe (ST)-** During 2013-14, among all the 30 districts of Odisha, in Schedule Tribe(ST), out of five major categories of Developmental Disabilities(DD) namely Mental Retardation(MR)/Intellectual Disability(ID), Learning Disability(LD), Cerebral palsy(CP), Autism and Multiple Disabilities, the prevalence of CP was highest .Out of total 3879 reported cases of above given DD among all districts of Odisha in ST category, there were 2245 LD cases were reported, which is about 57.89%. In which 658 cases were reported out of 2248 cases of LD in Kalihandi district of Odisha, which is about 29.30%. It shows that Learning Disability highest among all the five categories of DD in ST category.

In 2013-14, out of 263 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 143 cases of LD followed by 77 cases of Mental Retardation (MR)/Intellectual Disability (ID) were reported. It shows that in Sundargarh district among ST category there were about 54.37% of LD and 29.27% of MR were reported respectively. While there were no cases of autism reported during 2013-14

**Other Backward Caste (OBC)-** In the year 2013-14, among all the 30 districts of Odisha, in general category, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 8502 reported cases of above given DD among all districts of Odisha in OBC, there were 4021 reported cases of CP were found in OBC category, which is about 47.29%. In which about 4021 cases of CP were reported out of 4550 cases of CP in Puri district of Odisha, which is about 88.37%. It shows that CP is highest among all the five categories of DD in OBC category.

In the year 2013-14 out of 61 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 32 cases of MR/ID followed by 17 cases of LD. It shows that in Sundargarh district among OBC category there were about 52.45% of LD and 27.86% of MR were reported respectively. While there were no or zero cases of autism found in Sundargarh district of Odisha during 2013-14.

**Other-** During 2013-14, among all the 30 districts of Odisha, in general category, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation

(MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 164 reported cases of above given DD among all districts of Odisha in Other category, there were 38 reported cases of CP in other category , which is about 23.17%. In which about 38 reported cases were found out of 56 cases of CP in Puri district of Odisha, which is about 67.85% It shows that CP is highest among all the five categories of DD in Other category.

In 2013-14 out of 9 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 5 cases of LD followed by 2 cases of CP. It shows that in Sundargarh district among other category there were about 55.55% of LD and 22.22% of CP were reported respectively. While there were zero cases of Multiple Disabilities were reported during 2013-14 in Sundargarh district of Odisha.

#### **4.2.4 Prevalence and Categories of DD with respect to Caste during 2014-15**

**General Category-** During 2014-15, among all the 30 districts of Odisha, in general category, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 1538 reported cases of above given DD among all districts of Odisha in general category, there were 528 reported cases of CP, which is about 34.33%. In which 419 cases of CP were found out of 528 cases of CP in Puri district of Odisha, which is about 79.35% , It shows that CP is highest among all the five categories of DD in general category.

In the year 2014-15 out of 17 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 7 cases of LD and MR each followed by 2 cases of CP. It shows that in Sundargarh district among general category there were about 2.42% of LD, MR/ID and 11.76% of CP were reported respectively. While there is no reported cases of Multiple Disabilities found during 2014-15.

**Schedule Caste (SC) -** During 2014-15, among all the 30 districts of Odisha, in Schedule Caste (SC), out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 2725 reported cases of above given DD among all districts of Odisha in SC category, there were 967 reported cases of CP, which is about 35.48%. In which 725 cases of CP were found out

of total 967 cases of CP about 725 cases were found in Puri district of Odisha, which is about 74.97%. This indicates that CP is highest among all the five categories of DD in SC category.

In 2014-15, out of 32 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 14 cases of MR followed by 10 cases of LD. It shows that in Sundargarh district among SC category there were about 43.75% of MR and 34.37% of LD were reported respectively. While there were no cases of CP reported during 2014-15 in Sundargarh district of Odisha.

**Schedule Tribe (ST)-** During 2014-15, among all the 30 districts of Odisha, in Schedule Tribe (ST), out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 2973 reported cases of above given DD among all districts of Odisha in ST category, there were 1574 LD cases were reported, which is about 32.94%. In which 412 cases were reported out of 1574 cases of LD in Kandhamal district of Odisha, which is about 26.17%. It shows that Learning Disability is highest among all the five categories of DD in ST category.

In 2014-15, out of 183 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 103 cases of LD followed by 52 cases of Mental Retardation (MR)/Intellectual Disability (ID). It shows that in Sundargarh district among ST category there were about 56.28% of LD and 28.41% of MR were reported respectively. While autism reported lowest with 2 cases among all DD in Sundargarh district of Odisha during 2014-15.

**Other Backward Caste (OBC)-** In the year 2014-15, among all the 30 districts of Odisha, in general category, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 4609 reported cases of above given DD among all districts of Odisha in OBC, there were 1812 reported cases of MR/ID were found in OBC category, which is about 39.31%. About 1047 cases of CP were reported out of 1518 cases of CP in Puri district of Odisha, which is about 68.97%. It shows that CP was highest among all the five categories of DD in OBC category during 2014-15.

In the year 2014-15 out of 52 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 30 cases of MR/ID followed by 14 cases of LD. It shows that in Sundargarh district among OBC category there were about 57.69% of MR/ID and 26.92% of MR were reported respectively. While there were no cases of autism found in Sundargarh district of Odisha during 2014-15.

**Other-** In the year 2014-15, among all the 30 districts of Odisha, in general category, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 50 reported cases of above given DD among all districts of Odisha in Other category, there were 21 reported cases of MR/ID in other category, which is about 42%. In which about 5 reported cases were found out of 21 cases of MR/ID in Cuttack district of Odisha, which is about 23.80%. It shows that MR/ID is highest among all the five categories of DD in Other category.

In the year 2014-15 out of 3 reported cases of DD, highest number of reported cases in Sundargarh district was of CP. It reported 2 cases of CP followed by 1 case of MR. It shows that in Sundargarh district among Other category there were about 66.66% of CP and 33.33% of MR/ID were reported respectively. While there was no other DD reported during 2014-15 in Sundargarh district of Odisha.

#### **4.2.5 Prevalence and Categories of DD with respect to Caste during 2015-16**

**General Category-** During 2015-16, among all the 30 districts of Odisha, in general category, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 618 reported cases of above given DD among all districts of Odisha in general category, there were 302 reported cases of MR/ID, which is about 48.86%. In which 54 cases of MR/ID were found out of total 302 cases of MR/ID in Cuttack district of Odisha, which is about 17.88%. It shows that MR/ID is highest among all the five categories of DD in general category.

In 2015-16 out of 7 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 4 cases of MR/ID followed by 1 case CP, Autism and Multiple Disabilities each. It shows that in Sundargarh district among general category there were about 57.14% of MR/ID, and 14.2% each of CP, Autism and Multiple disability were reported respectively.



**Schedule Caste (SC)-** During 2015-16, among all the 30 districts of Odisha, in Schedule Caste (SC), out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 1294 reported cases of above given DD among all districts of Odisha in SC category, there were 495 reported cases of MR/ID, which is about 38.25%. About 131 cases of LD were found out of total 409 cases of LD in Kandhamal district of Odisha, which is about 32.027%. This indicate that LD highest among all the five categories of DD in SC category.

In 2014-15, out of 14 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 6 cases of MR followed by 3 cases of CP and Multiple disability each. It shows that in Sundargarh district among SC category, there were about 42.85% of MR and 21.42% of CP and Multiple disability each were reported respectively.

**Schedule Tribe (ST)-** During 2015-16, among all the 30 districts of Odisha, in Schedule Tribe(ST), out of five major categories of Developmental Disabilities(DD) namely Mental Retardation(MR)/Intellectual Disability(ID), Learning Disability(LD), Cerebral palsy(CP), Autism and Multiple Disabilities, the prevalence of CP was highest .Out of total 1667 reported cases of above given DD among all districts of Odisha in ST category, there were 802 LD cases were reported, which is about 48.11%. In which 313 cases of LD were reported out of total 802 cases of LD in Kandhamal district of Odisha, which is about 39.02%. It shows that Learning Disability highest among all the five categories of DD in ST category.

In 2015-16, out of 61 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 27 cases of MR/ID followed by 12 cases of LD. It shows that in Sundargarh district among ST category there were about 44.26% of MR/ID and 19.67% of LD were reported respectively. While multiple disability reported lowest with 5 reported cases during 2015-16 in Sundargarh district of Odisha.

**Other Backward Caste (OBC)-** During 2015-16, among all the 30 districts of Odisha, in general category, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 2422 reported cases of above given DD among all districts of Odisha in OBC, there were 1126 reported cases of MR/ID were found in OBC category, which is about 46.49%. About

274 cases of CP were reported out of 578 cases of CP in Puri district of Odisha, which is about 47.237%. It shows that MR is highest among all the five categories of DD in OBC category.

In 2015-16 out of 52 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 30 cases of MR/ID followed by 14 cases of LD. It shows that in Sundargarh district among OBC category there were about 57.69% of MR/ID and 26.92% of MR were reported respectively. While there were no cases of Autism found in Sundargarh district of Odisha during 2015-16.

**Other-** In the year 2015-16, among all the 30 districts of Odisha, in general category, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 50 reported cases of above given DD among all districts of Odisha in Other category, there were 21 reported cases of MR/ID in other category, which is about 42%. In which about 5 reported cases were found out of 21 cases of MR in Cuttack district of Odisha, which is about 23.80% It shows that MR/ID is highest among all the five categories of DD in Other category.

In 2015-16 out of 3 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 2 cases of CP followed by 1 cases of MR/ID. It shows that in Sundargarh district among other category there were about 66.66% of CP and 33.33% of MR/ID were reported respectively. While there were no cases of LD, Autism and Multiple disabilities reported during 2015-16 in Sundargarh district of Odisha

#### **4.2.6 Prevalence and Categories of DD with respect to Religion 2011-12**

**Muslim-** During 2011-12, among all the 30 districts of Odisha, in Muslim religion, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 3183 reported cases of above given DD among all districts of Odisha in Muslim community, there were 2720 cases of CP were found which about 85.45% is. Out of 2720 cases of CP, about 2645 cases of CP were reported in Puri district of Odisha, which is about 97.24% It shows that CP was highest among all the five categories of DD in Muslim community.

In 2011-12 out of 30 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 23 cases of LD followed by 4 cases of MR/ID. It shows that in Sundargarh district among Muslim community there were about 76.66% of LD and 13.33% of MR/ID were reported respectively. While there was 1 cases of CP which is about 3.33% It was lowest among all DD while there were no cases Autism was reported during 2011-12 in Sundargarh district of Odisha

**Christian-** During 2011-12, among all the 30 districts of Odisha, in Christian religion, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of LD was highest. Out of total 791 reported cases of the above given DD among all districts of Odisha in Christian community, there were 565 reported cases of LD were found which about 71.42% is. In which about 397 reported cases were found out of 565 cases of LD in Sundargarh district of Odisha, which is about 70.26% It shows that LD was highest among all the five categories of DD in Christian community.

In the year 2011-12 out of 433 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 397 cases of LD followed by 27 cases of MR/ID. It shows that in Sundargarh district among Christian community there were about 91.68% of LD and 6.23% of MR/ID were reported respectively. While there is 2 cases of Autism which is about 0.46% it was lowest among all DD during 2011-12 in Sundargarh district of Odisha.

**Sikh-** In the year 2011-12, among all the 30 districts of Odisha, in Sikh religion, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of MR/ID was highest. Out of total 5 reported cases of above given DD among all districts of Odisha in Sikh community, there were 3 reported cases of LD were found which is about 60%. In which 1 reported cases were found in Jhasurguda, Gajapati, Bhadrak each district of Odisha It shows that MR was highest among all the five categories of DD in Other category. It also illustrate that in Sikh community prevalence of DD is very less.

In the year 2011-12 there were no cases of developmental disability reported. It shows that either Sikh community is not affected by any of DD or they don't report it.

**Jain-** In the year 2011-12, among all the 30 districts of Odisha, in Jain religion, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of MR/ID was highest. Out of total 6 reported cases of above given DD among all districts of Odisha in Jain community, there were 4 reported cases of LD were found which about 66.66% is. In which 1 reported cases were found in Sundargarh, Jhasurguda, Dhenkanal, and Balasore each district of Odisha It shows that MR was highest among all the five categories of DD in Jain community. It also illustrate that in Jain community prevalence of DD is very less.

In the year 2011-12 there were no cases of developmental disability reported. It shows that either Jain community is not affected by any of DD or they don't report it.

**Buddhist-** In the year 2011-12, among all the 30 districts of Odisha, in Buddhist religion, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 109 reported cases of above given DD among all districts of Odisha in Buddhist community, there were 81 reported cases of CP were found which about 71.31% is. In which 46 reported cases out of 81 cases of CP were found in Puri district of Odisha, which constitute about 56.79%. It shows that CP was highest among all the five categories of DD in Buddhist community during 2011-12.

In the year 2011-12 there were no cases of developmental disability reported. It shows that either Buddhist community is not affected by any of DD or they don't report it.

**None-** In the year 2011-12, among all the 30 districts of Odisha, in none category, out of five major categories of Developmental Disabilities(DD) namely Mental Retardation(MR)/Intellectual Disability(ID), Learning Disability(LD), Cerebral palsy(CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 29695 reported cases of above given DD among all districts of Odisha in none category, there were 14395 reported cases of CP were found which is about 48.47%. In which 13300 reported cases of CP were found in Puri district of Odisha It shows that CP was highest among all the five categories of DD in None category during 2011-12.

In the year 2011-12 out of 559 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 387 cases of LD followed by 117

cases of MR/ID. It shows that in Sundargarh district among none category there were about 69.23% of LD and 20.93% of MR/ID were reported respectively. While there is 4 cases of autism which is about 0.71% it is lowest among all DD during 2011-12 in Sundargarh district of Odisha.

#### **4.2.7 Prevalence and Categories of DD with respect to Religion 2012-13**

**Muslim** - In the year 2012-13, among all the 30 districts of Odisha, in Muslim religion, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 2402 reported cases of above given DD among all districts of Odisha in Muslim community, there were 1999 reported cases of CP were found which about 83.22% is. In which about 1949 reported cases were found out of 1999 cases of CP in Puri district of Odisha, which is about 97.49% It shows that CP is highest among all the five categories of DD in Muslim community.

In the year 2012-13 out of 24 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 17 cases of LD followed by 5 cases of MR/ID. It shows that in Sundargarh district among Muslim community there were about 76.83% of LD and 20.83% of MR/ID were reported respectively. While there is 1 cases of CP and multiple disability each which is about 4.16% each. It is lowest among all DD while there were no autism cases were reported during 2013-14 in Sundargarh district of Odisha

**Christian-** In the year 2012-13, among all the 30 districts of Odisha, in Christian religion, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of LD was highest. Out of total 394 reported cases of above given DD among all districts of Odisha in Christian community, there were 196 reported cases of LD were found which about 49.74% is. In which about 95 reported cases were found out of 196 cases of LD in Sundargarh district of Odisha, which is about 48.46% It shows that LD was highest among all the five categories of DD in Christian community.

In the year 2012-13 out of 126 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 95 cases of LD followed by 22 cases of MR/ID. It shows that in Sundargarh district among Christian community there were

about 75.39% of LD and 17.46% of MR/ID were reported respectively. While there is 1 cases of multiple disability which is about 0.79% it is lowest among all DD during 2012-13 in Sundargarh district of Odisha.

**Sikh-** In the year 2012-13, among all the 30 districts of Odisha, in Sikh religion, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of MR/ID was highest. Out of total 4 reported cases of above given DD among all districts of Odisha in Sikh community, there were 3 reported cases of LD were found which about 75% is. In which 1 reported cases of MR/ID were found in Jhasurguda, Khurda, and Bhadrak each district of Odisha It shows that MR/ID was highest among all the five categories of DD in Other category. It also illustrate that in Sikh community prevalence of DD is very less.

In the year 2012-13 there were no cases of developmental disability reported. It shows that either Sikh community is not affected by any of DD or they don't report it.

**Jain-** In the year 2012-13, among all the 30 districts of Odisha, in Jain religion, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of MR/ID was highest. Out of total 6 reported cases of above given DD among all districts of Odisha in Jain community, there were 4 reported cases of LD were found which about 66.66% is. In which 1 reported case was found in Sundargarh, Jhasurguda, Dhenkanal, and Balasore each district of Odisha It shows that MR was highest among all the five categories of DD in Jain community. It also illustrate that in Jain community prevalence of DD is very less.

In the year 2012-13 there was only 1 reported case of autism found while there were no cases of developmental disability reported in rest of the DD. It shows that either Jain community is rarely affected by any of DD or they don't report it during 2012-13

**Buddhist-** In the year 2012-13, among all the 30 districts of Odisha, in Buddhist religion, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 92 reported cases of above given DD among all districts of Odisha in Buddhist community, there were 67 reported

cases of CP were found which about 72.82 % is. In which 25 reported cases out of total 67 cases of CP were found in Puri district of Odisha, which constitute 37.31% it shows that CP was highest among all the five categories of DD in Buddhist community during 2012-13.

In the year 2012-13 there were no cases of developmental disability reported. It shows that either Buddhist community is not affected by any of DD or they don't report it.

**None-** In the year 2012-13, among all the 30 districts of Odisha, in none category, out of five major categories of Developmental Disabilities(DD) namely Mental Retardation(MR)/Intellectual Disability(ID), Learning Disability(LD), Cerebral palsy(CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 2251 reported cases of above given DD among all districts of Odisha in none category, there were 10530 reported cases of CP were found which is about 46.77%. In which 9435 reported cases out of 10530 cases of CP were found in Puri district of Odisha, which is about 89.60%. It shows that CP was highest among all the five categories of DD in None category during 2012-13.

In the year 2012-13 out of 313 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 133 cases of LD followed by 123 cases of MR/ID. It shows that in Sundargarh district among none category there were about 42.49% of LD and 39.29% of MR/ID were reported respectively. While there were 4 cases of autism which is about 1.27% it is lowest among all DD during 2012-13 in Sundargarh district of Odisha.

#### **4.2.8 Prevalence and Categories of DD with respect to Religion 2013-14**

**Muslim-**In the year 2013-14, among all the 30 districts of Odisha, in Muslim religion, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 1712 reported cases of above given DD among all districts of Odisha in Muslim community, there were 1431 reported cases of CP were found which about 83.58% is. In which about 1375 reported cases were found out of 1431 cases of CP in Puri district of Odisha, which is about 96.08% It shows that CP is highest among all the five categories of DD in Muslim community.

In the year 2013-14 out of 23 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 14 cases of LD followed by 5

cases of MR/ID. It shows that in Sundargarh district among Muslim community there were about 60.86% of LD and 21.73% of MR/ID were reported respectively. While there is 1 cases of CP and multiple disability each which is about 4.23% It is lowest among all DD while there were no autism cases were reported during 2013-14 in Sundargarh district of Odisha

**Christian-** In the year 2013-14, among all the 30 districts of Odisha, in Christian religion, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of LD was highest. Out of total 240 reported cases of above given DD among all districts of Odisha in Christian community, there were 101 reported cases of LD were found which about 42.08 % is. In which about 60 reported cases were found out of 196 cases of LD in Sundargarh district of Odisha, which is about 59.40% It shows that LD was highest among all the five categories of DD in Christian community.

In the year 2013-14 out of 78 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 60 cases of LD followed by 9 cases of MR/ID. It shows that in Sundargarh district among Christian community there were about 76.92% of LD and 11.53% of MR/ID were reported respectively. While there is 1 cases of autism and multiple disability each which constitute 1.28% each .It is lowest among all DD during 2013-14 in Sundargarh district of Odisha.

**Sikh-**In the year 2013-14, among all the 30 districts of Odisha, in Sikh religion, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of MR/ID was highest. There were total 2 cases of MR/Id were reported in Khurda and Jhasurguda district of Odisha.

In the year 2013-14 there were no cases of developmental disability reported. It shows that either Sikh community is not affected by any of DD or they don't report it.

**Jain-** In the year 2013-14, among all the 30 districts of Odisha, in Jain religion, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of MR/ID was highest. Out of total 5 reported cases of above given DD among all districts of Odisha in Jain community, there were 4 reported cases of LD were found which is about 80% In which 1 reported cases were found in Balasore,



Jhasurguda, Dhenkanal, Sambalpur each district of Odisha It shows that MR was highest among all the five categories of DD in Jain community. It also illustrate that in Jain community prevalence of DD is very less.

In the year 2013-14 there was only 1 reported case of CP found while there were no cases of developmental disability reported in rest of the DD. It shows that either Jain community is rarely affected by any of DD or they don't report it during 2013-14

**Buddhist-** In the year 2013-14, among all the 30 districts of Odisha, in Buddhist religion, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 30 reported cases of above given DD among all districts of Odisha in Buddhist community, there were 20 reported cases of CP were found which is about 66.66%. In which 10 reported cases out of total 20 cases of CP were found in Sonepur district of Odisha, which constitute 50% .It shows that CP was highest among all the five categories of DD in Buddhist community during 2013-14.

In the year 2013-14 there were no cases of developmental disability reported. It shows that either Buddhist community is not affected by any of DD or they don't report it.

**None-** In the year 2013-14, among all the 30 districts of Odisha, in none category, out of five major categories of Developmental Disabilities(DD) namely Mental Retardation(MR)/Intellectual Disability(ID), Learning Disability(LD), Cerebral palsy(CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 18,512 reported cases of above given DD among all districts of Odisha in none category, there were 8088 reported cases of CP were found which is about 43.69%. In which 6844 reported cases out of 8088 cases of CP were found in Puri district of Odisha, which is about 84.61%. It shows that CP was highest among all the five categories of DD in None category during 2012-13.

In the year 2013-14 out of 265 reported cases of DD, highest number of reported cases in Sundargarh district was of MR/ID. It reported 117 cases of MR/ID followed by 95 cases of LD. It shows that in Sundargarh district among none category there were about 44.15% of MR/ID and 35.84% of LD were reported respectively. While there were 2 cases of autism which is about 0.75%. It is lowest among all DD during 2013-14 in Sundargarh district of Odisha.

#### 4.2.9 Prevalence and Categories of DD with respect to Religion 2014-15

**Muslim-** In the year 2014-15, among all the 30 districts of Odisha, in Muslim religion, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 681 reported cases of above given DD among all districts of Odisha in Muslim community, there were 360 reported cases of CP were found which is about 52.86%. In which about 318 reported cases were found out of 360 cases of CP in Puri district of Odisha, which is about 88.33% It shows that CP is highest among all the five categories of DD in Muslim community.

In the year 2014-15 out of 13 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 8 cases of LD followed by 2 cases of MR/ID and CP each. It shows that in Sundargarh district among Muslim community there were about 61.53% of LD and 15.38% of MR/ID and CP each were reported respectively. While there is 1 cases of multiple disability each which is about 7.69% It is lowest among all DD while there were no autism cases were reported during 2014-15 in Sundargarh district of Odisha

**Christian-** In the year 2014-15, among all the 30 districts of Odisha, in Christian religion, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of LD was highest. Out of total 240 reported cases of above given DD among all districts of Odisha in Christian community, there were 101 reported cases of LD were found which is about 42.08 %. In which about 60 reported cases were found out of 196 cases of LD in Sundargarh district of Odisha, which is about 59.40% It shows that LD was highest among all the five categories of DD in Christian community.

In the year 2014-15 out of 78 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 60 cases of LD followed by 9 cases of MR/ID. It shows that in Sundargarh district among Christian community there were about 76.92% of LD and 11.53% of MR/ID were reported respectively. While there is 1 case of autism and multiple disability each which constitute 1.28% each .It is lowest among all DD during 2014-15 in Sundargarh district of Odisha.

**Sikh-** During 2014-15, among all the 30 districts of Odisha, in Sikh religion, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, there were no reported cases of any of the developmental disabilities. It shows zero prevalence of DD among of the districts of Odisha during 2014-15

**Jain-** In the year 2014-15, among all the 30 districts of Odisha, in Jain religion, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of MR/ID was highest. Out of total 4 reported cases of above given DD among all districts of Odisha in Jain community, there were 3 reported cases of LD were found which is about 75%. In which 1 reported case was found in Balasore, Dhenkanal, and Sambalpur each district of Odisha It shows that MR was highest among all the five categories of DD in Jain category. It also illustrate that in Jain community prevalence of DD is very less.

In the year 2014-15 there was only 1 reported case of Autism found in Sundargarh district while there were no cases of developmental disability reported in rest of the DD in Sundargarh. It shows that either Jain community is rarely affected by any of DD Sundargarh district of Odisha or they don't report it during 2014-15

**Buddhist-** In the year 2014-15, among all the 30 districts of Odisha, in Buddhist religion, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 30 reported cases of above given DD among all districts of Odisha in Buddhist community, there were 20 reported cases of CP were found which is about 66.66%. In which 10 reported cases out of total 20 cases of CP were found in Sonepur district of Odisha, which constitute 50% it shows that CP was highest among all the five categories of DD in Buddhist community during 2014-15.

In the year 2014-15 there were no cases of developmental disability reported. It shows that either Buddhist community is not affected by any of DD or they don't report it.

**None-** In the year 2014-15, among all the 30 districts of Odisha, in none category, out of five major categories of Developmental Disabilities(DD) namely Mental Retardation(MR)/Intellectual Disability(ID), Learning Disability(LD), Cerebral palsy(CP),

Autism and Multiple Disabilities, the prevalence of MR was highest. Out of total 11,029 reported cases of above given DD among all districts of Odisha in none category, there are 3622 reported cases of MR which is about 82.84%. In which 1924 reported cases out of 3061 cases of CP were found in Puri district of Odisha, which is about 62.85%. It shows that Puri have highest prevalence rate of CP while MR was highest among was highest among all the five categories of DD in None category during 2014-15.

In the year 2014-15 out of 73 reported cases of DD, highest number of reported cases in Sundargarh district was of MR/ID. It reported 94 cases of MR/ID followed by 69 cases of LD. It shows that in Sundargarh district among none category there were about 46.30% of MR/ID and 33.99% of LD were reported respectively. While there were 2 cases of autism which is about 0.98% it is lowest among all DD during 2014-15 in Sundargarh district of Odisha.

#### **4.2.10 Prevalence and Categories of DD with respect to Religion 2015-16**

**Muslim-** In the year 2015-16, among all the 30 districts of Odisha, in Muslim religion, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of MR/ID was highest. Out of total 196 reported cases of above given DD among all districts of Odisha in Muslim community, there were 76 reported cases of CP were found which is about 38.77%. In which about 28 reported cases were found out of 49 cases of Autism in Balasore district of Odisha, which is about 57.14% It shows that MR is highest among all the five categories of DD in Muslim community.

In the year 2015-16 out of 10 reported cases of DD, highest number of reported cases in Sundargarh district was of Autism. It reported 4 cases of Autism followed by 3 cases of Multiple Disability. It shows that in Sundargarh district among Muslim community there were about 40% of Autism and 30% of Multiple Disability each were reported. While there is 1 case of MR/ID which is about 10% It is lowest among all DD while there were no autism cases were reported during 2015-16 in Sundargarh district of Odisha

**Christian-** In the year 2015-16, among all the 30 districts of Odisha, in Christian religion, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of MR/ID was highest. Out of total 116 reported cases of

above given DD among all districts of Odisha in Christian community, there were 46 reported cases of MR were found which is about 39.65 %. In which about 26 reported cases were found out of 46 cases of MR/ID in Gajapati district of Odisha, which is about 56.52% It shows that LD was highest among all the five categories of DD in Christian community.

In the year 2015-16 out of 14 reported cases of DD, highest number of reported cases in Sundargarh district was of Learning Disability. It reported 5 cases of LD followed by 4 cases of MR/ID. And CP each It shows that in Sundargarh district among Christian community there were about 35.71% of LD and 28.57% of MR/ID and CP each were reported respectively. While there is 2 cases of multiple disability each which constitute 14.28% each. It is lowest among all DD during 2015-16 in Sundargarh district of Odisha.

**Sikh-** During 2015-16, among all the 30 districts of Odisha, in Sikh religion, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, there were no reported cases of any of the developmental disabilities. It shows zero prevalence of DD among of the districts of Odisha during 2015-16

**Jain-** In the year 2015-16, among all the 30 districts of Odisha, in Jain religion, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, there were total 1 case reported among all the categories of DD and that prevalence was observed in MR/ID in Balasore district of Odisha.

**Buddhist-** In the year 2015-16, among all the 30 districts of Odisha, in Buddhist religion, out of five major categories of Developmental Disabilities (DD) namely Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral palsy (CP), Autism and Multiple Disabilities, the prevalence of CP was highest. Out of total 14 reported cases of above given DD among all districts of Odisha in Buddhist community, there were 10 reported cases of CP were found which is about 71.42%. In which 7 reported cases out of total 10 cases of CP were found in Angul district of Odisha, which constitute 70% it shows that CP was highest among all the five categories of DD in Buddhist community during 2015-16.

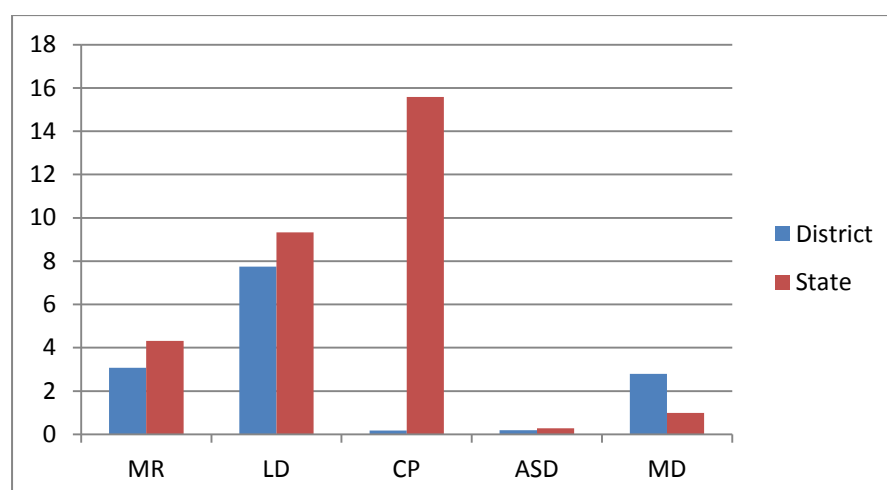
In the year 2015-16 there were no cases of developmental disability reported. It shows that either Buddhist community is not affected by any of DD or they don't report it.

**None-** In the year 2015-16, among all the 30 districts of Odisha, in none category, out of five major categories of Developmental Disabilities(DD) namely Mental Retardation(MR)/Intellectual Disability(ID), Learning Disability(LD), Cerebral palsy(CP), Autism and Multiple Disabilities, the prevalence of MR was highest. Out of total 5723 reported cases of above given DD among all districts of Odisha in none category, there were 2238 reported cases of MR were found which is about 39.10%. In which 548 reported cases out of 1747 cases of LD were found in Kandhamal district of Odisha, which is about 39.10%. It shows that Kandhamal have highest prevalence rate of LD while MR was highest among was highest among all the five categories of DD in None category during 2015-16.

In the year 2015-16 out of 78 reported cases of DD, highest number of reported cases in Sundargarh district was of MR/ID. It reported 47 cases of MR/ID followed by 10 cases of LD & CP each. It shows that in Sundargarh district among none category there were about 60.25% of MR/ID and 12.82% of LD & CP each were reported respectively. While there were 5 cases of autism which is about 6.41%. It is lowest among all DD during 2015-16 in Sundargarh district of Odisha.

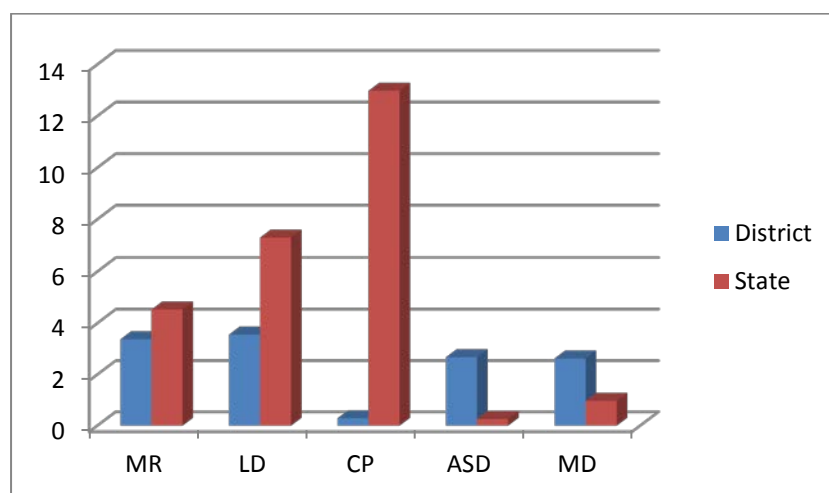
### 4.3 Comparisons between Odisha and Sundaragrh based on average Data

A comparison of average prevalence data with regard to five different categories of disability is presented below with graphical representation. Odisha data is denoted as State and Sundargarh data is denoted as District in the figures.



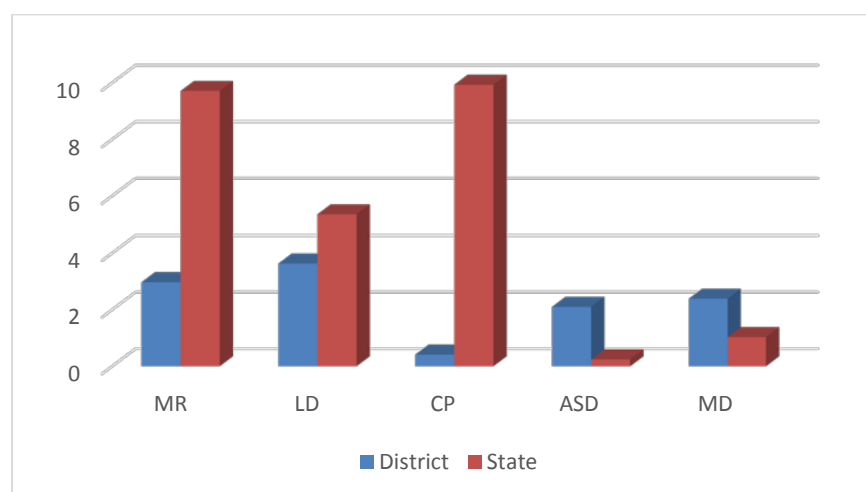
**Fig 4.3.1 State vs District comparison of DD (2011-12)**

Figure 4.3.1 illustrate that Cerebral Palsy is highest with 15.59% of prevalence, whereas ASD is lowest with the prevalence of 0.28% across Odisha. In Sundargarh district, Learning disability is highest with 7.74% of prevalence whereas Cerebral Palsy is lowest with 0.17% prevalence.



**Fig 4.3.2 State vs District comparison of DD (2012-13)**

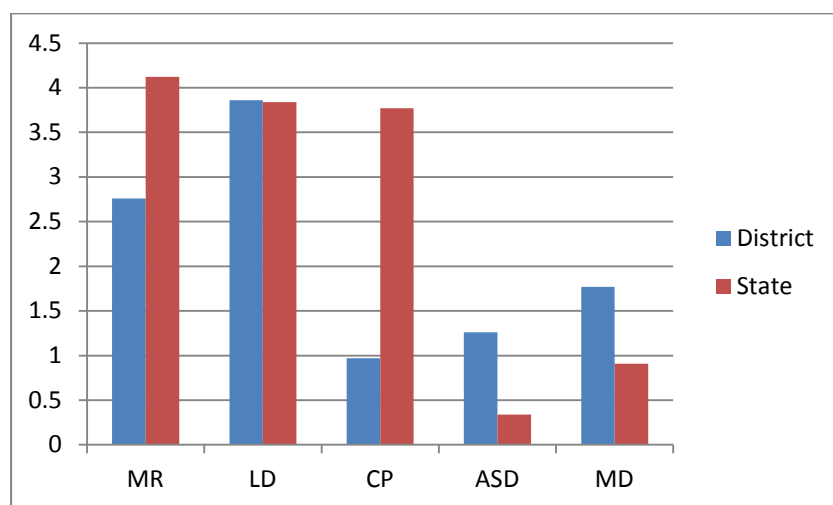
Figure 4.3.2 represents that Cerebral Palsy is highest with 12.98% of prevalence in Odisha while Autism Spectrum Disorder (ASD) is lowest with 0.26%. In Sundargarh district prevalence of Mental Retardation/Intellectual Disability is highest with 3.38% whereas Cerebral Palsy is lowest with 0.29% of prevalence.



**Fig 4.3.3 State vs District comparison of DD (2013-14)**

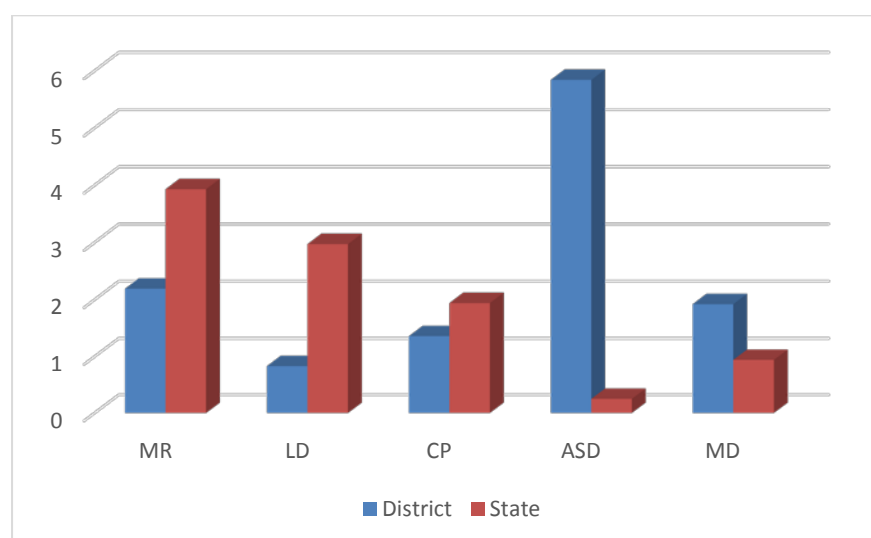
Figure 4.3.3 illustrate that Cerebral Palsy is highest with 9.93 % in the overall prevalence rate of other developmental disability across Odisha. While Multiple disabilities (MD) is

lowest with 0.24% in comparison to other forms of DD in Odisha. In Sundargarh district, Mental Retardation (MR)/Intellectual Disability (ID) is highest with 2.97% of prevalence whereas Cerebral Palsy is lowest with prevalence of 0.41%



**Fig 4.3.4 State vs District comparison of DD (2014-15)**

This graphical representation illustrate that Multiple Retardation (MR) is highest with 4.12% in overall prevalence rate of other developmental disability (DD) across Odisha, whereas, Autism Spectrum Disorder (ASD) is lowest in overall prevalence rate of other DD across Odisha. In Sundargarh district Learning Disability is highest with 3.86%, while CP is lowest in Sundargarh with 0.97% of prevalence.



**Fig 4.3.5 State vs District comparison of DD (2015-16)**



Figure 4.3.5 illustrate that prevalence of Mental retardation is highest with 3.93% prevalence whereas Autism Spectrum Disorder is lowest with 0.25% of prevalence across Odisha. While Autism Spectrum Disorder (ASD) is highest with 5.84% of prevalence whereas learning disability is lowest with 0.83% of prevalence in the overall comparison of DD in Sundargarh.

## **CHAPTER-5**

### **DISCUSSION AND CONCLUSION**

The objective of the present study was to examine the prevalence and socio-demographic profiling of children with developmental disabilities. While searching for secondary sources of data on disability, it was observed that hardly any systematic data is available. This compelled the researchers to depend on the available data set to work with. As Odisha Primary Education Program Authority made it available, the project focused on these data sets. However, we could not get any systematic data prior to 2011. The discussions are based on the data available from 2011 to 2015. Hence, finding out a trend from these data was not possible. There were 15 different categories of children with special needs according to OPEPA website. However, for our purpose we have analyzed the data on five categories namely, Mental Retardation (MR)/Intellectual Disability (ID), Learning Disability (LD), Cerebral Palsy (CP), Autism Spectrum Disorder (ASD), and Multiple Disability (MD).

#### **5.1 Developmental Disability among various Religious Groups**

From the data of Odisha Primary Education Program Authority, on developmental disability, the current study analyzed 5 years of available data (2011-12 to 2015-16) of developmental disability cases, of all the 30 districts of Odisha given emphasis on five major developmental disabilities namely Cerebral palsy, Intellectual Disability/Mental Retardation, Learning Disability, Autism and Multiple Disability with respect to six different minority religion categories.

During 2011-12, out of five minority community religion namely Muslim, Christian, Sikh, Jain and Buddhist excluding one category whose category name is not indicated and named as none category religion, highest cases of developmental disability was found in Muslim community with 3,183 cases across Odisha, whereas in Sundargarh district of Odisha highest cases of developmental disability was illustrated in Christian community with 433 cases. While there were no cases reported among Jain, Buddhist and Sikh community in Sundargarh district. Overall among all these five minority community prevalence of CP is highest with 2,720 cases which is again found in the Muslim community. In none category CP were highest across Odisha with 14,395 cases and in Sundargarh district, Learning disability were highest with 559 cases among developmental disability.

During 2012-13, out of above given five minority community religion, highest cases of developmental disability is found in muslim community with 2,402 cases across Odisha, where as in Sundargarh district of Odisha highest cases of developmental disability was illustrated in Christian community with 126 cases. While there were no cases of any developmental disability were reported among Buddhist and Sikh community but one case was visible in Sundargarh district Overall among all these five minority community prevalence of CP is highest with 1999 cases which are again found in the muslim community. In none category, CP is highest across Odisha with 10,530 cases and in Sundargarh district, Learning disability is highest with 313 cases among developmental disability.

During 2013-14, out of above given five minority community religion, highest cases of developmental disability is found in the Muslim community with 1,712 cases across Odisha, whereas in Sundargarh district of Odisha highest cases of developmental disability was illustrated in Christian community with 78 cases. While there were no cases any developmental disability were reported among Buddhist community but one case of CP is reported in Jain community and 2 cases of Intellectual disability was seen Sikh community residing in Sundargarh district Overall among all these five minority community prevalence of CP was highest with 1999 cases which are again found in the muslim community. In none category, CP is highest across Odisha with 8,088 cases and in Sundargarh district, Learning disability is highest with 265 cases among developmental disability.

During 2014-15, out of above given five minority community religion, highest cases of developmental disability was found in Muslim community with 681 cases across Odisha, where as in Sundargarh district of Odisha highest cases of developmental disability was illustrated in Christian community with 78 cases. While there were no cases any developmental disability were reported among Buddhist community but one case of autism was visible in Jain community residing in Sundargarh district. And also no cases of any category of developmental disability were reported across Odisha in Sikh community. Overall among all these five minority community prevalence of CP is highest with 360 cases which are again found in muslim community. In none category CP were highest across Odisha with 3,622 cases and in Sundargarh district, Learning disability were highest with 203 cases among developmental disability.

During 2015-16, out of above given five minority community religion religion, highest cases of developmental disability is found in the Muslim community with 196 cases across

Odisha, where as in Sundargarh district of Odisha highest cases of developmental disability was illustrated in Christian community with 14 cases. While there were no cases any developmental disability were reported among Buddhist and Jain community in Sundargarh district. And also no cases of any category of developmental disability were reported across Odisha in Sikh community. Overall among all these five minority community prevalence of CP is highest with 76 cases which are again found in Muslim community. In none category Intellectual disability/Mental retardation were highest across Odisha with 2,238 cases and in Sundargarh district, Learning disability is highest with 78 cases among developmental disability.

From above discussion, it is observed that Muslim community is highly prone to developmental disability across Odisha while in Sundargarh district, Christian community is highly affected by developmental disability. Cerebral Palsy cases were highest across Odisha. It is also observed that from 2011-12 to 2015-16 cases of developmental disability is showing a drastic decrease in its prevalence across Odisha among all community.

## **5.2 Developmental Disability among various Castes**

From the data of Odisha Primary Education Program Authority, on developmental disability, the current study analyzed 5 years of available data (2011-12 to 2015-16) of developmental disability cases, of all the 30 districts of Odisha given emphasis on five major developmental disabilities namely Cerebral Palsy, Intellectual Disability/Mental Retardation, Learning Disability, Autism and Multiple Disability with respect to five different caste categories namely General, Schedule Caste(SC), Schedule Tribe(ST), Other Backward Caste(OBC) and other caste categories.

During 2011-12, out of the above given five caste category, highest cases of developmental disability is found in OBC category with 2,422 cases across Odisha, where as in Sundargarh district of Odisha highest cases of developmental disability are illustrated in ST category with 61 cases. Overall among all caste categories, Intellectual Disability(ID/Mental retardation(MR) is found highest across Odisha with 1,126 cases that too illustrated in OBC community While lowest case is reported in other category in Sundargarh district with 3 cases of developmental disability.

During 2012-13, out of the above given five caste category, highest cases of developmental disability is found in OBC category with 9,732 cases across Odisha, whereas

in Sundargarh district of Odisha highest cases of developmental disability is illustrated in ST category with 315 cases. Overall among all caste categories, Cerebral Palsy was found highest across Odisha with 6,009 cases that too illustrated in OBC community while lowest case is reported in another category in Sundargarh district with 12 cases of developmental disability.

During 2013-14, out of the above given five caste category, highest cases of developmental disability is found in OBC category with 8502 cases across Odisha, whereas in Sundargarh district of Odisha highest cases of developmental disability is illustrated in ST category with 263 cases. Overall among all caste categories, Cerebral Palsy was found highest across Odisha with 4,021 cases that too illustrated in OBC community while lowest case is reported in another category in Sundargarh district with 25 cases of developmental disability.

During 2014-15, out of the above given five caste category, highest cases of developmental disability is found in OBC category with 4,609 cases across Odisha, whereas in Sundargarh district of Odisha highest cases of developmental disability is illustrated in ST category with 183 cases. Overall among all caste categories Intellectual Disability(ID/Mental retardation(MR) is found highest with 1,812 cases that too illustrated in OBC community. While lowest cases are reported in other category in Sundargarh district with 9 cases of developmental disability.

During 2015-16, out of the above given five caste category, highest cases of developmental disability is found in OBC category with 2,422 cases across Odisha, where as in Sundargarh district of Odisha highest cases of developmental disability was illustrated in ST category with 61 cases. Overall among all caste categories, Intellectual Disability(ID/Mental retardation(MR) was found highest across Odisha with 1,126 cases that too illustrated in OBC community While the lowest case was reported in another category in Sundargarh district with 3 cases of developmental disability.

From above discussion in caste wise prevalence, it is observed that OBC has the highest prevalence rate of developmental disability. While CP remains highest among all types of developmental disabilities. It is also observed that prevalence rate of developmental disability is decreasing with the year.

### 5.3 Limitations of the Study

Systematic studies in the field of developmental disabilities are yet to come. In this regard, the present study is just a beginning. Majority of the studies in India focused on intervention. Though it is important to develop intervention for the children with DD, it is also equally important to know the trend in which the prevalence goes. Such studies would help policy makers plan and implement various measures to address multifarious issues of disability. In the present data set, two of the important variables on DD is not available i.e., age and sex. Without these two important variables, the severity at various age levels and with prevalence of DD with each sex was impossible to analyze. A primary survey could have been conducted taking some blocks into account, which could not be pursued owing to paucity of time. Future studies may add this information for a comprehensive understanding and appropriate intervention for the DD children.

### 5.4 Conclusion

Health is a primary concern for all. When it comes to disabled population, then their needs surpass the needs of the people who are otherwise not disabled. However, the facilities and provisions mandated for them rarely benefit them, due to a lack of data on the prevalence and other statistics. Often, it was found that, people who do not deserve to get a disability certificate, they have one and the deserving one runs from pillar to post to get one. Within the categories of disability, there is a need to distinguish them not only according to the degree of disability, but on the basis of the trainability and dependency. Only one criterion would not fit for different categories. For example, each of the developmentally disabled child has unique needs. Hence, '*one size fits all*' approach will not be an appropriate one. The enumeration of the children must be handled by qualified and trained professionals as it was observed from the data that in the 'other' category, the number is quite high. The meaning of the 'other' is not clear. Data on important demographics must be there for each individual identified with some form of disability. The nomenclature bears a psychological significance. Using the terms 'Differently Able' or 'Divyang' would certainly boost their self-perception. However, the need to provide them a better quality of life require more measurable efforts on the ground, to make them realize their full potential and help them lead a meaningful life.

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